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10/661,492	09/15/2003	Chu-Ting Su	REAP0480USA	9226
27765	7590	11/16/2007	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			LAO, LUN S	
			ART UNIT	PAPER NUMBER
			2615	
			NOTIFICATION DATE	DELIVERY MODE
			11/16/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu.uspto@gmail.com  
Patent.admin.uspto.Rcv@naipo.com  
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## Office Action Summary

Application No.

10/661,492

Applicant(s)

SU ET AL.

Examiner

Lun-See Lao

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 24-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Introduction*

1. This action is in response to the amendments filed on 09-02-2007. Claims 1-23 have been canceled and claims 24-37 have been added. Claims 24-37 are pending.

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the an analog-to-digital converter, coupled to the impedance detecting circuit, for converting the analog signals to a plurality of digital values which includes first, second and third digital values; and a control circuit, coupled to the analog-to-digital converter, for determining the type of the external device when the first, second and third digital values together indicate a recognized condition must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 24 and 29- 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Adams (US PAT. 6,594,366).

Consider claim 24 Adams teaches an apparatus for automatically determining a type of an external device, comprising (see fig.2):

a jack for coupling the external device(see fig.1 (120) and see col. 2 line 20-47);

an impedance detecting circuit (see figs.3-4), coupled to the external device through the jack, for generating three or more analog signals according to an impedance of the

external device inherently (because the an impedance detecting circuit can detect first impedance and second impedance and inherently it will detect third impedance and fourth impedance and see col.2 line 48-67);

an analog-to-digital converter (266 in fig.2), coupled to the impedance detecting circuit, for converting the analog signals to a plurality of digital values which includes first, second and third digital values (see col. 3 line 15-col. 4 line 50); and

a control circuit (208 in fig. 2), coupled to the analog-to-digital converter, for determining the type of the external device when the first, second and third digital values together indicate a recognized condition (because the fig.4 shown, the comparison of the digital value together indicate recognized condition of the telephone headset, the telephone headset is characterized by one 8-ohm channel (audio output) and one high impedance ( $>10$  K.OMEGA.) channel for the microphone (i.e., one for left and one for right channels. An exemplary sensing circuit for sensing one channel is shown in FIG. 4 and see col. 3 line 15-col. 4 line 50).

Consider claim 33 it is essentially similar to claim 24 and is rejected for the reason stated above apropos to claim 24.

Consider claim 29-31 Adams teaches a connection detecting circuit, coupled between the jack and the impedance detecting circuit, for determining whether the external device couples to the jack such that the impedance detecting circuit generates the plurality of analog signals when the connection detecting circuit determines the external device being coupled to the jack (see figs 3-4 and col. 3 line 45-col. 4 line 45); and the control circuit disconnects the coupling relation between the impedance

detecting circuit and the jack after determining the type of the external device(see col. 3 line 45-col. 4 line 45); and a multiplexing circuit (see fig.3, (203)) for coupling the external device to an internal circuit according to the type of the external device determined by the control circuit(see col. 3 line 45-col. 4 line 45).

Consider claim 32 Adams teaches that a decoder, coupled to the control circuit, for receiving a first number of outputs from the control circuit and thereby generating a second number of outputs; wherein the second number is larger than the first number (see figs 2-4 and col. 3 line 45-col. 4 line 45).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 25-28 and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams (US PAT. 6,594,366) in view of Dao (US PAT. 6,407,633).

Consider claim 26 Adams teaches that the apparatus of the impedance detecting circuit comprises:

a plurality of impedance elements (see figs 2-3); but Adams does not explicitly teach a switching circuit for selectively coupling at least one of the impedance elements to the external device and thereby sequentially generating a first, second and third analog

signals which are respectively converted into the first, second and third values by the analog-to-digital converter.

However, Dao teaches a switching circuit for selectively coupling at least one of the impedance elements to the external device and thereby sequentially generating a first, second and third analog signals which are respectively converted into the first, second and third values by the analog-to-digital converter (see fig.3, 72 and col. 3 line 35-667 and col. 7 line 20-col. 8 line 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Dao into the teaching of Adams to provide better sound quality.

Consider claims 26-28 Dao teaches the recognized condition represents that each of the first, second and third values falls within a predetermined range; wherein at least two of the first, second and third values correspond to different predetermined ranges (see fig.3, 72 and col. 3 line 35-667 and col. 7 line 20-col. 8 line 12); and the predetermined ranges comprise a first range, a second range and a third range such that the control circuit determines the type of the external device when the first value falls within the first range, the second value falls within the second range and the third value falls within the third range (see fig.3, 72 and col. 3 line 35-667 and col. 7 line 20-col. 8 line 12); and at least two of the first, second and third ranges are different (see fig.3, 72 and col. 3 line 35-667 and col. 7 line 20-col. 8 line 12).

Consider claims 34-37 they are essentially similar to claims 25-28 and are rejected for the reason stated above apropos to claims 25-28.

***Response to Arguments***

7. Applicant's arguments with respect to claims 24-37 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that Adams NEITHER teaches an impedance detecting circuit for generating at least three analog signals which are thereafter converted into first, second and third digital values according to an impedance of an external device NOR discloses a control circuit for determining a type of the external device when the first, second and third digital values TOGETHER INDICATE a recognized condition (see remarks page 7 last paragraph.

The examiner disagrees. Adams discloses an impedance detecting circuit (see figs.3-4), coupled to the external device through the jack, for generating three or more analog signals according to an impedance of the external device inherently; because the an impedance detecting circuit can detect first impedance and second impedance and inherently it will detect third impedance and fourth impedance ( see col.2 line 48-67); and Adams discloses a control circuit (208 in fig. 2), coupled to the analog-to-digital converter(266 in fig.2), for determining the type of the external device when the first, second and third digital values together indicate a recognized condition; because the fig.4 shown, the comparison of the digital value together indicate recognized condition of the telephone headset, the telephone headset is characterized by one 8-ohm channel (audio output) and one high impedance (>10 K.OMEGA.) channel for the microphone (i.e., one for left and one for right channels. An exemplary sensing circuit

for sensing one channel is shown in FIG. 4 (see col. 3 line 15-col. 4 line 50). It meets the limitation as recited in the claim.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Vonlanthen (US PAT. 6,934,400) is cited to show other related apparatus for automatic identification of audio input/output device and method thereof.

10. Any response to this action should be mailed to:

Mail Stop \_\_\_\_ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:  
**(571) 273-8300**


Hand-delivered responses should be brought to:  
Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See 215.  
Patent Examiner  
US Patent and Trademark Office  
Knox  
571-272-7501  
Date 11-02-2007

  
VIVIAN CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600